

Amendments to the Claims

Below is a listing of all claims showing markings of amendments according to the USPTO's proposed Revised Amendment Format. In the present listing, claims 1-23 have been canceled without prejudice or disclaimer of subject matter recited therein. New claims 24-49 have been added.

Claims 1-23. (Canceled)

24. (New) A method of operating an analytical server which is positioned between a client and a Relational Database Management System (RDBMS), the method operable to provide an interface between the client and a relational database located on the RDBMS, the relational database having fact tables, dimension tables, and metadata describing the relationships between the fact and dimension tables, the method comprising:

- receiving in the analytical server, from the RDBMS, at least a portion of the metadata information regarding the relational database and its organization, including information about a logical hierarchy of the fact and dimension tables;
- receiving in the analytical server, from the client, a metric query;
- determining, based on the received information regarding the logical hierarchy of the fact and dimension tables and based on the metric query received from the client, which hierarchical levels of the fact and dimension tables are available in the relational database for responding to the metric query;
- determining at least one database query according to the available hierarchical levels of the fact and dimension tables; and
- sending the determined at least one database query to the RDBMS whereby the metric query can be responded to by the analytical server based on responses of the RDBMS to the determined at least one database query.

25. (New) The method of claim 24 wherein a star schema is defined in the relational database, wherein the star schema comprises a single fact table and zero or more dimension tables which can be joined to the fact table according to selection constraints and aggregate groupings specified in the metadata.

26. (New) The method of claim 25 wherein the metadata includes a table which stores a supported level for each dimension used in the star schema.

27. (New) The method of claim 24 wherein the fact and dimension tables of the relational database includes a time dimension table.

28. (New) The method of claim 27 wherein the time dimension table supports first- and second-level dimensions.

29. (New) The method of claim 28, wherein the first-level dimension table designates “years” and wherein the second-level dimension table designates “months.”

30. (New) The method of claim 27, wherein the fact and dimension tables of the relational database includes at least two time dimension tables, wherein one time dimension table supports a first certain hierarchical level and wherein a second time dimension table supports a second certain hierarchical level.

31. (New) The method of claim 24, wherein the metadata further comprises security hierarchy levels assigned to certain measures within the relational database and wherein the at least a portion of the metadata received in the analytical server, from the RDBMS, includes information about the security hierarchy levels, the method further comprising:

determining, based in part on the received information regarding the security hierarchy levels of the fact and dimension tables and based on the metric query received from the client, which measures of the fact and dimension tables are available in the relational database for responding to the metric query.

32. (New) The method of claim 24, and further comprising:

collecting usage statistics based upon the required and availability and use of the fact and dimension tables within the database; and
reporting the usage statistics, the reporting of the usage statistics based at least in part on the hierarchical level of the fact and dimension tables accessed.

33. (New) The method of claim 24, and further comprising:
receiving a plurality of metric queries from the client, the plurality of metric queries requesting at least two metrics which are broken down at the same hierarchical level; and
sending at least one database query to the RDBMS which retrieves measures from the RDBMS which are usable in common between the at least two metrics.

34. (New) A method of executing a metric query for a relational database, the relational database having fact tables, dimension tables, and metadata describing the relationships between the fact and dimension tables, wherein the fact tables include measures which can be additive or non-additive, and wherein the metadata includes a designation specifying by dimension which measures are additive and which measures are non-additive, the method comprising:
receiving the metric query from a client;
determining which hierarchical levels of the fact and dimension tables are available in the relational database for responding to the metric query;
determining at least one database query according to the available hierarchical levels of the fact and dimension tables;
retrieving data corresponding to the at least one database query from the relational database; and
responding to the metric query based on the data retrieved, whereby the response is tailored to the most efficient hierarchical level necessary depending on whether the measures of the requested metric are additive.

35. (New) A method according to claim 34, wherein the metric query calls for a metric broken down across a requested dimension and also calls for a roll-up of that metric.

36. (New) A method according to claim 34, wherein the metric query is received by an analytical server which is positioned between the client and a Relational Database Management System (RDBMS); the relational database is located on the RDBMS; and the method is operable on the analytic server to provide an interface between the client and the relational database.

37. (New) A method according to claim 36, wherein the analytical server receives from the RDBMS at least a portion of the metadata information including information about whether certain measures are additive and information about the logical hierarchy of the fact and dimension tables.

38. (New) A method according to claim 37, wherein the available hierarchical levels of the fact and dimension tables are determined based on the metric query received from the client and based on the received metadata information from the RDBMS regarding the logical hierarchy of the fact and dimension tables and whether the measures of the requested metric are additive.

39. (New) A method according to claim 35, wherein the determining of the at least one database query takes into account whether the requested metric is additive specifically across the requested dimension.

40. (New) A method of executing a metric query for a relational database, the relational database having fact tables, dimension tables, and metadata describing the relationships between the fact and dimension tables, the method comprising:
receiving the metric query from a client;
determining which hierarchical levels of the fact and dimension tables are available in the relational database for responding to the metric query, wherein at least one measure within the fact and dimension tables are insufficiently fine in a requested dimension in order to respond to the metric query;
determining at least one metric by which the at least one measure which was unavailable at the requested fineness can be approximated by the using the measure along the

requested dimension at a higher hierarchical level than the one needed to directly respond to the metric query; and

sending a database query to the relational database based on the determining of available hierarchical levels of the fact and data tables and upon at least one higher hierarchical level for the needed measure along the dimension which was unavailable at the needed hierarchical level.

41. (New) A method according to claim 40, wherein the determining of which hierarchical levels of the fact and dimension tables are available in the relational database is based on a logical hierarchy of the fact and dimension tables and based on the metric query received from the client.

42. (New) A method according to claim 41, wherein the at least one metric by which the at least one measure which was unavailable at the requested fineness is determined according to the available hierarchical levels of the fact and dimension tables.

43. (New) A method according to claim 40, wherein
the metric query is received by an analytical server which is positioned between the client
and a Relational Database Management System (RDBMS);
the relational database is located on the RDBMS; and
the method is operable on the analytic server to provide an interface between the client
and the relational database.

44. (New) A method according to claim 43, wherein the analytical server receives, from the RDBMS, information about whether certain measures are additive and information about the logical hierarchy of the fact and dimension tables.

45. (New) The method of claim 40, wherein the measure which was unavailable at the requested fineness was a time measure.

46. (New) The method of claim 45, wherein a requested hierarchical level along the time dimension was for a measure broken down by month.

47. (New) The method of claim 46, wherein to approximate the measure on a monthly basis, a measure broken down by quarter is divided by three and assigned to the requested months.

48. (New) The method of claim 46, wherein to approximate the measure on a monthly basis, the measure is repeated at the requested months.

49. (New) The method of claim 48, wherein the measure was an average.